Research

Cet article est basé sur une étude entreprise parmi des étudiants infirmiers dan le but d'identifier les risques professionnels dont ils sont exposés. Les résultats ont permis de formuler des recommandations comprenant l'introduction de l'ergonomie et la biomécanique dans la formation des étudiants infirmiers concernant des maintiens de fonctionnement et des transferts de patient.

Este artigo baseia-se num estudo efectuado entre estudantes de enfermagem para identificar os riscos ocupacionais a que estão expostos. Com base nos resultados deste estudo fizeram-se certas recomendações as quais incluem a introdução de ergonomia e bio-mecânica nos cursos de instrução em enfermagem relacionados com atitudes no trabalho e transferência de doentes.

Summary

This study was carried out among student nurses of the University of Benin Teaching Hospital (UBTH) with the general objective of studying the occupational hazards they face. Student nurses are an "un recognised" group of health care providers such as medical doctors and registered nurses.

A total population of student nurses was included in the cross sectional study. The mean age of the respondents was 23.19±2.9 years. Majority of the students (88.5%) had experienced back pain making it the most predominant mechanical hazard and this was attributed mainly to lifting patients. Only 12.3% of the student nurses admitted mainly to the use of drugs to help fall asleep. Regarding the most preferred shift 71.5% of the students interviewed chose the morning shift. Excellent relationship was observed among the students. The least cordial relationship was between the students and ward-nurses.

Based on the findings of this study, some recommendations have been made including introduction of ergonomics and biomechanics into the course of instruction for student nurses concerning working postures and patient transfers.

Key words: Occupational hazards, Student nurses, Hospital.

Introduction

The origin of the nursing profession goes back less than a century and a half with the work of the English nurse Florence Nightingale, the founder of modern professional nursing who also established the first school of nursing in London in 1960 (World Bank Encyclopaedia, 1988).

The nurse in the African region was defined as a person who having received authorised education and training, has acquired knowledge, skills and attitudes in promotion of health, the prevention of illness and the care of the sick, thus making him/her an integral member of a health team capable of solving within the limits of his/her competence, the health problems which arise in the community (Adelowo, 1989).

Against this backdrop, the nursing student may be defined as a person who is receiving authorised education and training, acquiring knowledge, skills and attitudes in the promotion of health, the prevention of illness and care of the sick thus making him/her an integral member of a health team capable of solving within the limits of his/her competence the health problems which arise in the community.

The nursing education programmes provide both classroom training and practical/clinical experiences. The greater part of the clinical experiences of the student nurse is obtained in the hospitals. They are therefore part of the health team and are equally if not more prone to risk of occupational hazard encountered in the hospital setting than other health workers.

The relevant hazards in health care include biological hazards, particular hepatitis B, AIDS virus, other blood borne infections and the renewed possibility of tuberculosis infection, often multi drug resistant (Cesana, Arduca, Latocca and Sirtori, 1998), chemical hazards involving exposure to antineoplastic and antiviral agents, sterilants like ethylene oxide and formaldehyde and the possible risk of drug dependency and abuse (Cesana, Arduca, Latocca and Sirtori, 1998). Cytotoxic chemotherapeutic agents has been suggested to be carcinogenic, teratogenic and mutagenic (Mayer, 1992).

A study revealed that approximately 10% of...
nurses are chemically dependent, and for many, substance abuse begins while attending nursing school (Coleman, Honeycutt, Ogden, McMillian, O’Sullivan, Light and Wingfield, 1997).

Physical hazards commonly found in hospitals include exposures to ionizing radiations (Cesana et al., 1998), non-ionizing radiations (Cesana et al., 1998), slippery floors, electrical hazards, noise, poor lighting, and inadequate ventilation (Triolo, 1998).

Mechanical hazards in the hospitals include back pain from manual lifting (patients in particular) which makes nursing one of the occupations most affected by low back pain (Cesana et al., 1998). Describing the extent of muscular skeletal injury in nurses, one survey showed nurses lost 750,000 days a year as a result of back pain (Triolo, 1998). Other mechanical hazards includes injury from needle prick, cuts from drug ampoules, scalp cuts, cuts from surgical blades and injury from diathermy (Hollway, 1992). These injuries expose the student nurses to blood borne infections. A study carried out by Hollway (1992) found that needle stick and sharp injuries were responsible for 35% of hospital injuries. A study carried out over a period of 2 years in a 1100 bed hospital, 799 reported accidental exposures were needle stick and 18% were cutaneous or mucous membrane splashes.

Nurses and nursing students incurred 78.8% of the exposures (Yassi and McGill, 1991). The rate exposure per 100,000 hours worked showed nursing students to be At particular high risk, highlighting the need for specific instructions (Yassi and McGill, 1991).

Psycho social hazards with particular reference to stress in emergency departments and every where a strong psychological engagement is required, (Cesana et al, 1998) contact with the dying, seriously ill children, suicidal and disturbed patients and distressed relatives occur early in student life and brings considerable stress. Stress can be an occupational hazard because it arises from the environment and may lead to accident or injuries.

A study carried out by Shields (1999) showed that women who worked long hours had increased odds of subsequently experiencing depression. Shift duty was found to be a cause of job dissatisfaction among staff of ten wards of a country hospital. 83% of them did not want to go on working shift (Todd, Robinson and Reid, 1993). Shift work can have a negative impact on job performances, sleep, physical and emotional health, social life, family life, drug use and level of job related stress. For nurses, these negative effects have consequences not just for the individual but for the workplace, so decreased alertness and reduced job performances could endanger human lives (Brown-Degagne and Eskers, 1998). One of the grave consequences of stress encountered in nursing school is issue of drug/chemical dependency. These drug range from mild analgesics to strong ones containing morphine/Opioid preparation, coffee and sedatives etc.

Student nurses are an "un recognised" group of health care providers. This is reflected in the very little or no work being done on them as compared with other health care providers such as medical doctors, registered nurses. Therefore studying the health hazards they are exposed to is appropriate.

Materials and Methods

The study was a cross sectional study which was conducted between July 1999 and Jan 2000 among nursing students in University of Benin Teaching Hospital (U.B.T.H) Benin City, Edo State, Nigeria. The school of nursing is situated within the complex of the University of Benin Teaching Hospital, which is located along Lagos Road in Egor local government area of Edo State.

All the student nurses undergoing the basic nursing were included in the study except the new intakes for the short course programme as they had only spent 3 months in the school and had no ward experience/exposure at the time of the study.

Pretesting of the questionnaire was carried out among students of the state schools of nursing in General Hospital, Benin City Edo State, Nigeria. Which runs a similar programme with that of U.B.T.H. Twenty student nurses were interviewed after which necessary amendments were made.

A total of 130 questionnaires were retrieved and analysed.

Results

Table 1 shows the age distribution of respondents. Eighty-two (63.1%) of the student nurses fell within the age range of 20-24 years. The mean age of the students was 23.19 +/- 2.91 years. Majority of them (99.2%) were females. The work related hazards among nursing students are shown in figure 1. One hundred and fifteen (88.5%) of the students had suffered from back pain, 77 (59.2%) had have blood splashes since they started the hospital. The causes of back pain experienced by the students nurses are shown on table 2. Ninety-eight (75.4%) of the respondents said it was as a result of lifting patient, 14(10.8%) said it was as a result of standing for a long time, while 13 (10.0%) said it was a result of lifting hospital beds.

Eight(6.2%) respondents found it difficult to sleep at night while 2 (1.5%) felt difficult to sleep or not. Sixteen (12.3%) of the respondents had taken drugs or medicine to help them fall asleep, 112 (86.2%) did not use drugs to help them fall asleep and 2(1.5%) withholds information on this. Only 1(0.8%) had taken drug before depression.

Table 3 shows the distribution of drugs taken routinely and their indications. Paracetamol is the most frequently taken drug (39.2%) followed by anti-malarial drugs (11.5%).

Figure 2 shows the distribution of responder on the most preferred shift. Ninety-th (71.5%) of the respondents preferred morning duty, 31(23.9%) preferred the afternoon shift while only 3(2.3%) preferred the night duty.

Eighty point eight percent of the respondents found night duty to be the greatest threat to mental and emotional health. (figure 3)

Only 3%, 19.2%, 23.1% and 3.8% did not have cordial relationship with colleagues, class teachers, ward nurse and room mates respectively (figure 4).

Eighty-one (62.3%) of the respondents were stressed during ward posting, 46 (34.4%) during classroom lectures and 3 (2.3%) are stressed during practical session.

Discussion

Most of the respondents (63.1%) were aged 20-24 years, this is to be expected as the population under study is that of students (table 1). Majority of the respondents were female (99.2%), while only 1 (0.8%) was a male. This gives credence to the fact that the nursing profession is predominantly that of females (table 1).

Back pain ranked highest among the list of wor related hazards. One hundred and fifteen (88.5%) students nurses had back pain (figure 1). The major cause attributed to back pain was lifting patient. This was mentioned by 75.4% of the respondents. This finding is keeping with a survey, which revealed that nurses lost 750,000 working days a year as a result of back pain (Triolo, 1988).

Among the mechanical hazard, which exposes workers to blood borne infections, blood splashes was the commonest. This is in keep with the study carried out by Ofili and her colleagues (2000) where cutaneous exposures were found to be commoner than blood borne infections. Fifty percent of the students had needle pricks injury and cuts from drug ampoules. Ofili and her colleagues (2000) found cuts from drug ampoules as the commonest per cutaneous injury among nurses while other studies (Camilleri et al, 1991 a
Hussain et al, (1998) found needle pricks as the commonest per cutaneous injury. Only eight student nurses (6.2%) found it difficult to sleep at night, while only 12.3% of them admitted to using drugs to help them fall asleep. This shows a very low level of drug dependency amongst the students regarding the use of sedatives. This is in keeping with the study that revealed the approximately 10% of the nurses are clinically dependents and that for many, substances abuse begins while attending nursing school(Coleman et al, 1997). This was further confirmed by the fact that only 5 (3.8%) students admitted to taking sedatives routinely (table 3). Paracetamol was found to be the most routinely taken drugs (39.2%) for headaches and pain. Though it is a relatively safe drug, excessive consumption of paracetamol can lead to hepatotoxicity, which could be aggravated by drinking alcohol. Thus proper adherence to manufacturer’s instruction on dosage and contra-indication should be advised and encouraged.

Regarding the most preferred shift, 71.5% of the students interviewed chose the morning shift. This is not surprising as it is in line with the normal circadian rhythm while the night duty was reported by 80.8% of respondents to be the shift posing the greatest threat to mental and emotional health. Shift duty has been found among staff of ten wards of a country hospital to be responsible for job dissatisfaction, 83% of them did not want to go on working the shift (Todd et al, 1993). Excellent relationship was observed among the students. The least cordial relationship was between students and ward nurses. Twenty-three point one percent (23.1%) of the respondents had a poor interpersonal relationship with the ward nurses. This is a potential source of conflict among the students as this may precipitate anxiety, which can lead to emotional disturbances.

There is need for widespread immunization of the students against Hepatitis B, and tuberculosis, and provision of adequate safety measures such as easily movable beds, easily available hand washing and sanitary facilities, adequate isolation where necessary, available hand protection and barrier creams at hand basins. There is also need for introduction of ergonomics and biomechanics into the course of instruction for student nurses concerning working postures and patient transfer. This might go a long way in reducing the high rate of back pain.

Acknowledgment
The authors are grateful to all the nurses at the University of Benin Teaching Hospital for their cooperation during the collection of data. The contributions of Sarimiye F, Ukpomwan O, and Yama O, during the data collection is acknowledged.

References


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<th>Demographic Characteristics</th>
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<td></td>
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<tr>
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<td>Class Distribution of Respondents (n = 130)</td>
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<td>Short course (1.5 years)</td>
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<td>100</td>
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Table 1: Demographic Characteristics of the Study Population

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Figure 1: Work related hazards among nurses at the University of Benin Teaching Hospital, Benin-City

Figure 2: Shift most preferred by respondents

1 = Morning Shift - 71.5%
2 = Afternoon Shift - 23.9%
3 = Night Shift - 2.3%
4 = No response - 2.3%

Figure 3: Shift duty posing the greatest threat to the mental and emotional health of student nurses

1 = Night Shift - 80.8%
2 = No Response - 1.5%
3 = Morning Shift - 11.5%
4 = Afternoon Shift - 6.2%
Figure 4: Relationship of respondents with colleagues, class teachers, ward nurses and roommates

Table 2: Causes of back pain among nursing students

<table>
<thead>
<tr>
<th>Causes of Back Pain</th>
<th>N</th>
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<tbody>
<tr>
<td>Lifting Patient</td>
<td>98</td>
<td>75.4</td>
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<tr>
<td>Prolonged Standing</td>
<td>17</td>
<td>13.1</td>
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<td>Lifting Machine</td>
<td>14</td>
<td>10.8</td>
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<tr>
<td>Lifting Bed</td>
<td>13</td>
<td>10.0</td>
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<tr>
<td>Wound Dressing</td>
<td>13</td>
<td>10.0</td>
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<tr>
<td>Too Much Work</td>
<td>4</td>
<td>3.1</td>
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<tr>
<td>Observing Patient</td>
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<td>3.1</td>
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<tr>
<td>Tepid Sponging</td>
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Table 3: Routine Drugs Used by Student Nurses and Their Indications

<table>
<thead>
<tr>
<th>Drug</th>
<th>Uses</th>
<th>No of Respondents</th>
<th>Percentage %</th>
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<tr>
<td>Paracetamol</td>
<td>Headache</td>
<td>51</td>
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<td></td>
<td>Pain</td>
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<td></td>
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<tr>
<td>Antimalarial (Chloroquine, Quinine, Fansidar)</td>
<td>Malaria</td>
<td>15</td>
<td>11.5</td>
</tr>
<tr>
<td></td>
<td>Sedation</td>
<td>3</td>
<td>2.3</td>
</tr>
<tr>
<td></td>
<td>Sedation</td>
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<td>1.5</td>
</tr>
<tr>
<td></td>
<td>Headache</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>Pain</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>Dysmenorrhoea</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Peptic Ulcer</td>
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<td>0.8</td>
</tr>
<tr>
<td></td>
<td>Blood</td>
<td>2</td>
<td>1.5</td>
</tr>
</tbody>
</table>

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12 May 2002

Dear Colleagues

Wherever nurses work, their focus is on the family - its health, its ability to grow, care for itself, and contribute to the community. To emphasise the nurse’s role in family health, the ICN has selected *Nurses Always There for You: Caring for Families* as the theme for International Nurses’ Day (IND), 12 May 2002.

ICN has done considerable work in this area. The *Caring for Families* document builds on this previous work, which includes several products. In 1994 ICN published the *Healthy Families for Healthy Nations* kit as part of the year’s IND celebrations. The inaugural Virginia Henderson Fellowship in 1999 focused on the family nurse and most recently, ICN published *The Family Nurse*, a monograph outlining key issues, roles and models in family nursing.

For most of the world’s people, health is served by community-based, primary care services, delivered overwhelmingly by nurses. The communities are diverse as are the places where nurses practice. However, the family, in one way or another, is always a principal target for nursing care.

This year’s IND of *Nurses Always There for You: Caring for Families* aims to:

- Increase awareness of the nurse’s role in family care and family health, including as the primary point of entry into the health care delivery system.
- Encourage nursing involvement in the development and implementation of health and social policies that are ‘family-friendly’.
- Draw attention to the importance of the family and the role of family members in their own health individually and as a family unit.

The trust and close relationship that exists between nurses and families means that nurses can be powerful advocates in determining the best public policy for family health. As part of your IND activities, we encourage your association to share your knowledge and experience in caring for families with policy makers, the public, and other health professions with a view to encouraging ‘family friendly’ policies in health care delivery. We look forward to hearing about your subsequent successes.

The health of the family has never been more important in shaping a strong and vibrant society. As nurses help individuals and families to make healthy choices, cope with illness and chronic disability, manage stress and work with them in their homes, schools and workplaces, they are helping to ensure the strength of the most fundamental building block of society.

Sincerely

Christine Hancock
President

Judith A Outon
Chief Executive Officer

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